

can omit a CMP processing entirely or at least reduce a load upon CMP. Furthermore, the electrolytic processing of a substrate can be effected even by solely using pure water or ultrapure water. This obviates the possibility that impurities 5 such as an electrolyte will adhere to or remain on the surface of the substrate, can simplify a cleaning process after the removal processing, and can remarkably reduce a load upon waste liquid disposal.

Further, by floatingly supporting electrode members or an 10 electrode base provide with electrode members, even when there are individual differences among the electrode members, the contact pressures of the electrode members on a substrate can be equalized, thereby equalizing the processing amount over the entire processing surface of the substrate and also equalizing 15 the surface roughness of the processed surface.

Furthermore, the present invention makes it possible to extend the life of an ion exchanger covering the surface of an electrode, thereby enhancing the productivity.

While the present invention has been described above in 20 terms of certain preferred embodiments, the present invention is not limited to the above-described embodiments and many variations and modifications can be made within the technical concept of the invention.

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Industrial Applicability

The present invention can advantageously be used for processing a conductive material formed on a substrate, such as a semiconductor wafer, or removing impurities adhering to the surface of a substrate.

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ABSTRACT OF THE DISCLOSURE

The present invention provides an electrolytic processing apparatus and an electrolytic processing method which can

perform processing of a substrate without destroying devices formed in the substrate even when a fragile material is employed in the substrate and which can reduce non-uniformity in the contact pressure of an electrode member on a substrate during 5 processing, thereby equalizing the processing amount in the entire processing surface of the substrate and the surface roughness after processing. The electrolytic processing apparatus includes: a substrate holder for holding a substrate; an electrode base provided with a electrode member for contact 10 with the substrate, held by the substrate holder, in the presence of a liquid to effect processing of the substrate; and a support base for floatingly supporting the electrode base by a floating mechanism.